

Project 2: As the Weather Turns

Findings:

The prediction of National Weather Service is pretty reliable, but some inaccuracies were observed too. According to the graphs plotted I found that as the time increased the accuracy of temperature prediction also decreased. Although the predicted values of a closer time like 3 hours, 6 hours from now were not super accurate, still they were closer as compared to the predicted values of 12 hours from now, 48 hours from now etc.

Analyzing the data from CSV files and doing some math:

The accuracy of prediction ranged from 30% to 70% when I took the error rate of ± 3 or an exact match. The reason for some discrepancies might be that some regions in the country are more difficult to predict for their precipitation or the methods need to be improved in order to improve the forecast accuracy.

Graphs:

Time Lags Taken:

3 Hours from now

6 Hours from now

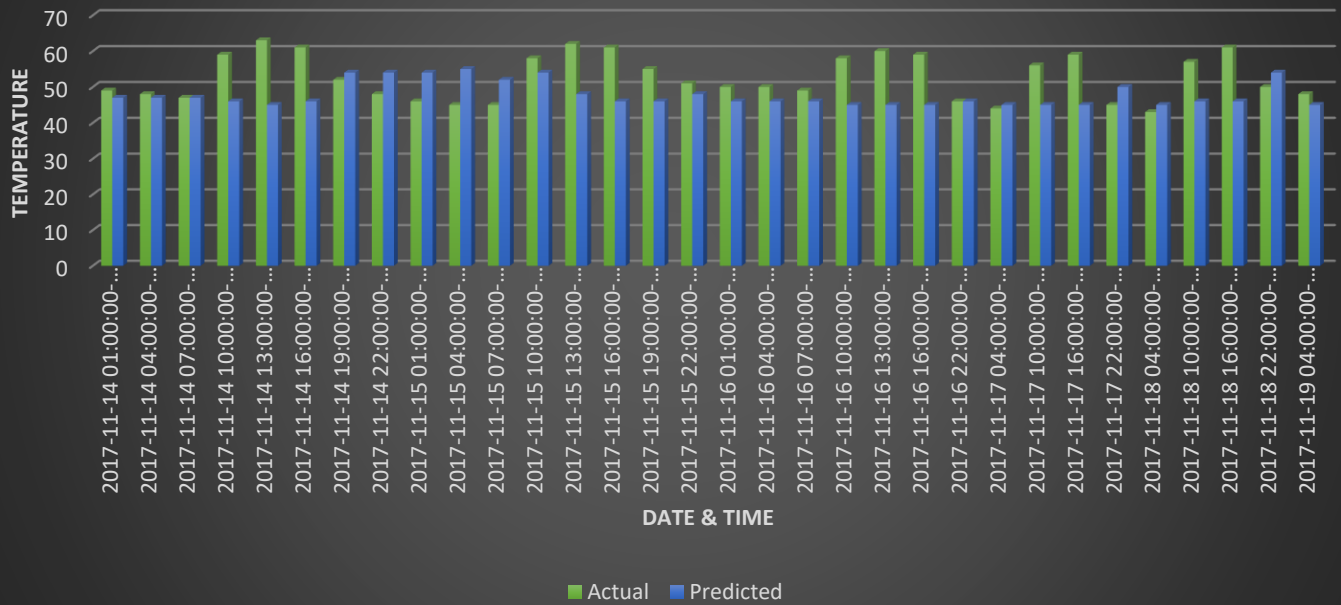
12 Hours from now

48 Hours from now

5 Days from now

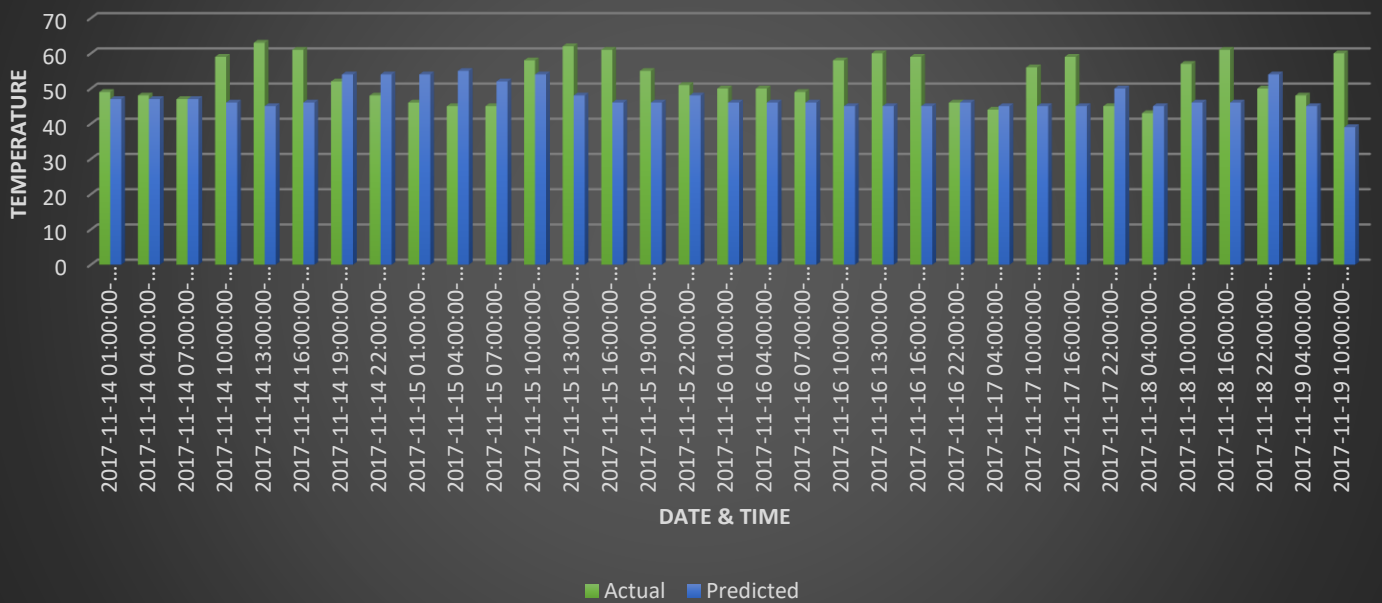
9 Days from now

Actual Vs Predicted (3 Hrs From Now)

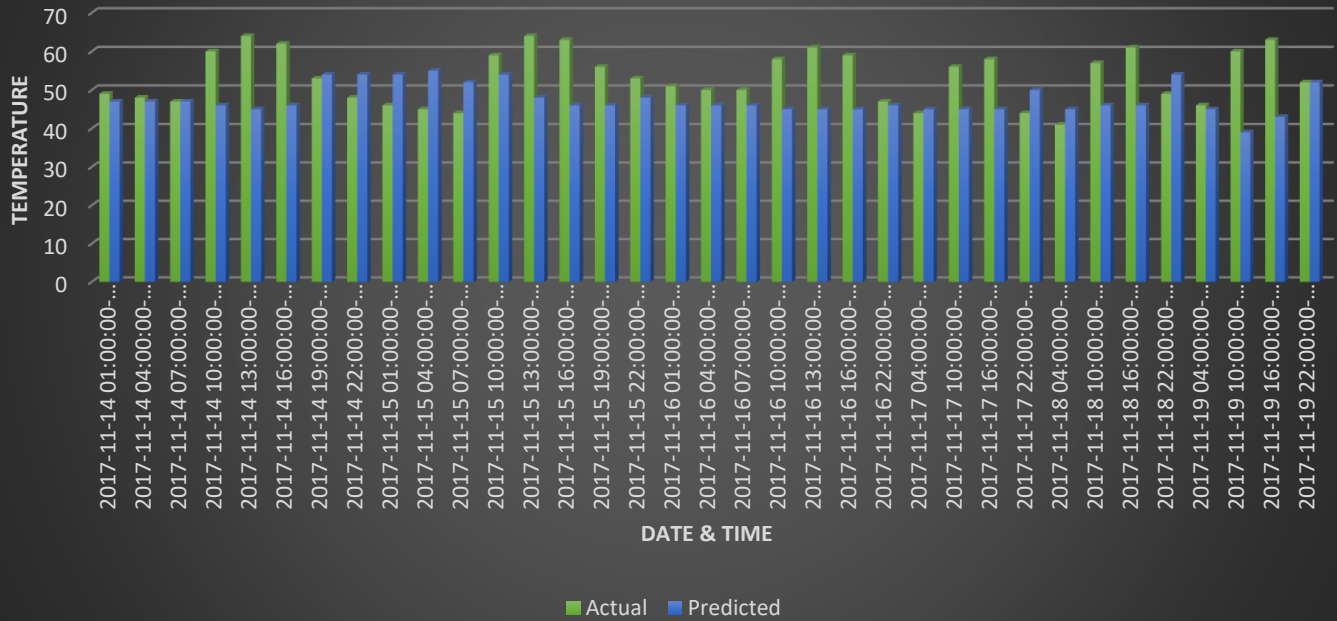


Here the Prediction accuracy is close and somewhat comparable

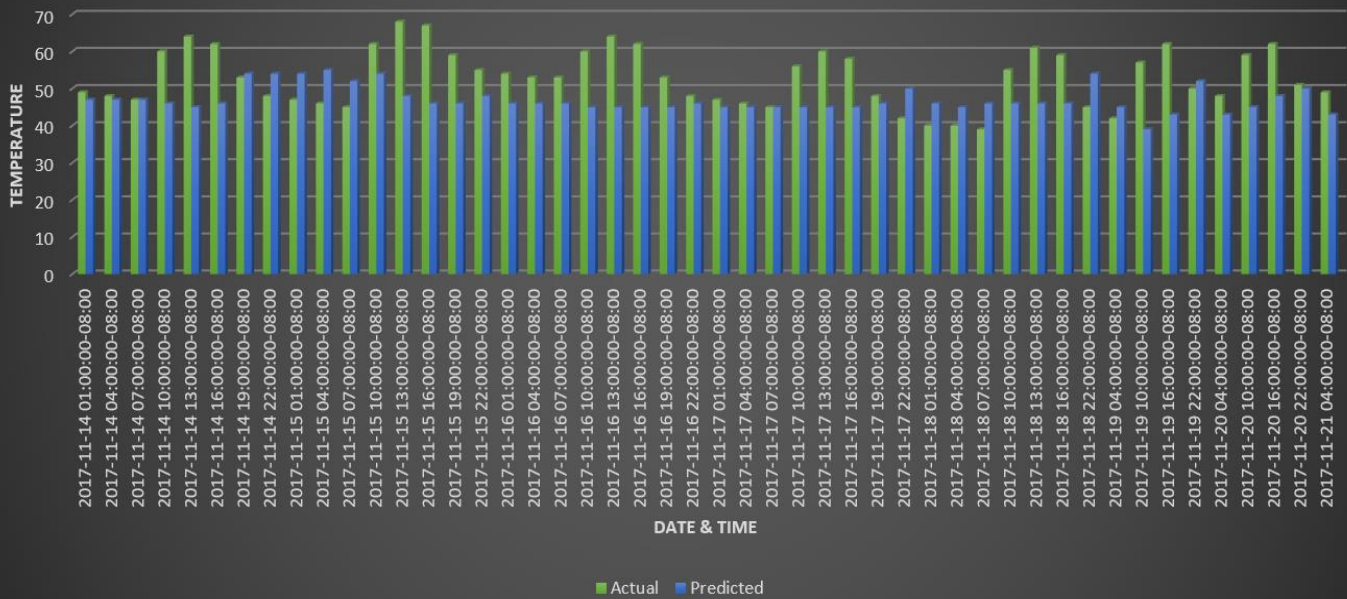
Actual Vs Predicted (6 Hrs from Now)



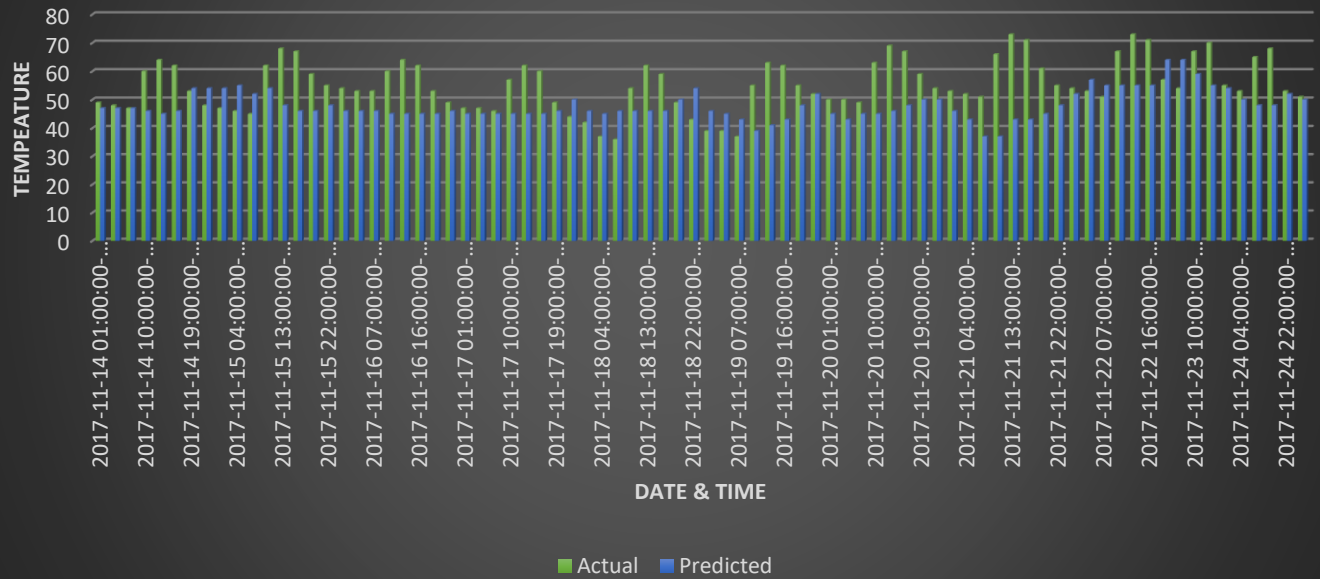
Actual Vs Predicted(12 Hrs From Now)



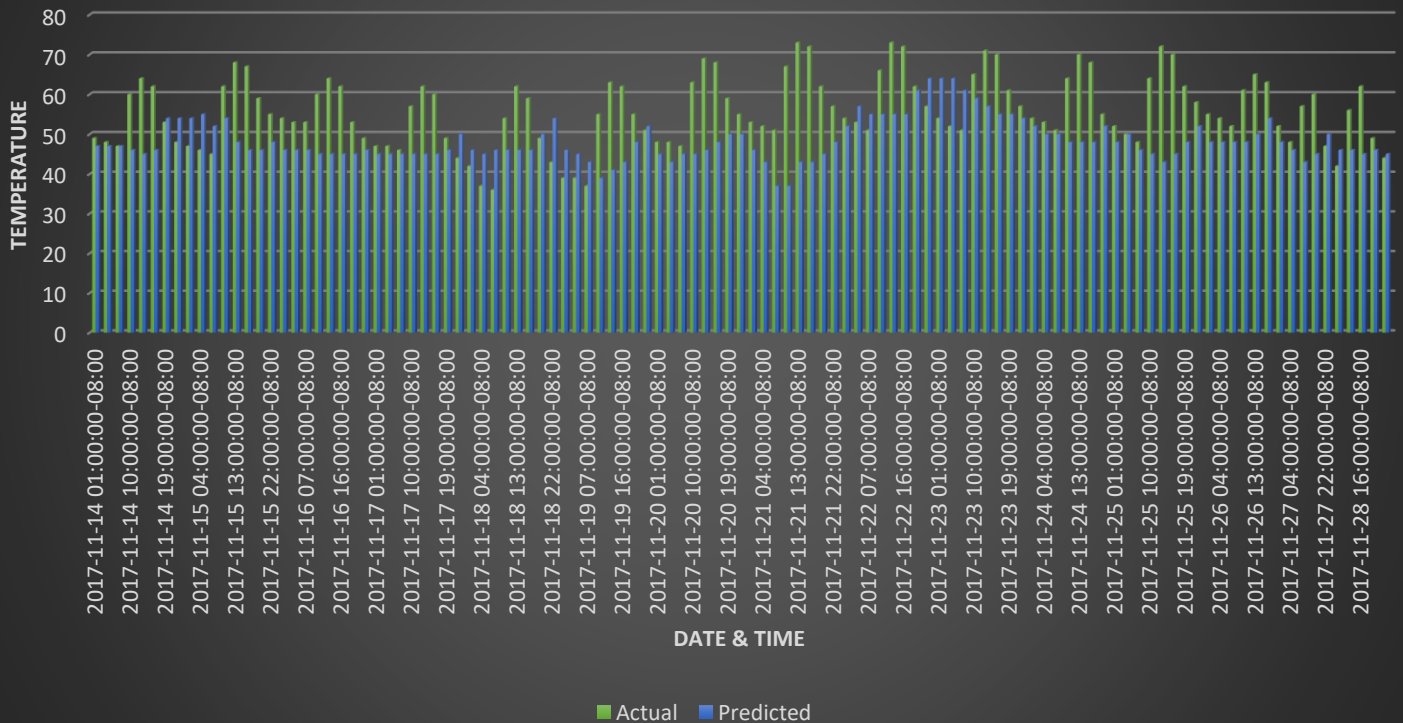
Actual Vs Predicted(48 Hrs From Now)



Actual Vs Predicted (5 days from Now)



Actual Vs Predicted(9 Days From Now)



Conclusion: According to the graphs generated the forecast is reliable but still there were some inaccuracies. The nearby lags show higher accuracies as compared to far lags. The later inaccuracies may have occurred due to the factors that determine weather forecast, they depend on huge amount of data which is collected from different sources. The other thing that makes it hard to predict the weather is that the weather patterns are always moving and forecasting error increases through time. slight changes in the weather variables can result in dramatic changes to the forecast.